

# Disposing Vaccines in Michigan

Some unused, nonviable or expired vaccines may be returned to the vaccine manufacturer for credit under the manufacturer's vaccine return policy. Ensure follow up with the appropriate vaccine manufacturer. If the vaccine is Vaccines for Children (VFC) vaccine, contact your Local Health Department (LHD). If the vaccine is private vaccine, be sure to contact the manufacturer.

Proper disposal of vaccines is everyone's responsibility to protect our environment. If the vaccine cannot be returned to the vaccine manufacturer, then proper disposal guidelines need to be followed. There may be times when disposal of vaccine vials and pre-filled syringes will need to occur even if the vial or syringe is not empty<sup>1</sup>.

To dispose of these materials appropriately, you need to know if they contain any of the following:

- Hazardous waste
- Medical/biohazardous waste
- Both (hazardous and medical/biohazardous)
- Nonhazardous/noninfectious waste

## **Hazardous Waste**

Vaccines are considered hazardous waste if they contain mercury (such as thimerosal<sup>2</sup>) or cresol-based preservatives. These are most commonly found in multi-dose vials and some pre-filled syringes. Any vial that is not empty<sup>1</sup> and contains vaccine with mercury (thimerosal) or cresol-based preservatives must be managed as hazardous waste. This includes all multi-dose vials of vaccine and the vaccine Fluvirin<sup>®3</sup> pre-filled syringes (manufacturer is Seqirus), which contains a trace amount of mercury (thimerosal). Hazardous waste may be disposed of in a hazardous waste container or sharps container only if the medical waste disposal company responsible for disposing the container has a license to dispose of hazardous waste, specifically vaccines that contain mercury (thimerosal). If your medical waste disposal company does not handle hazardous waste, you must find a company that is licensed to dispose of hazardous waste.

## **Medical/Biohazard Waste (Infectious Waste)**

Infectious waste has the potential to transmit disease to humans. Medical/biohazard waste disposal is not the same as hazardous waste disposal. Hazardous waste is disposed of differently because it contains mercury (thimerosal).

Medical/biohazard waste is any waste that contains infectious material or potentially infectious substances, such as blood, and should be disposed of in a medical waste bin, bag, or sharps container. Needles, blades, glass pipettes, and other wastes that can cause injury during handling should be disposed of as medical/biohazard waste. Syringes with a sharp (a needle) are considered medical/biohazard waste and need to be disposed of in a sharps container. Live attenuated vaccines are considered medical waste and should be disposed of in a medical waste bin, bag, or sharps container.

## **Nonhazardous/Noninfectious (normal trash)**

An empty vial that contains preservative-free vaccine is non-infectious and not considered medical waste.

Nonhazardous and noninfectious waste is waste that can be disposed of in the normal trash. It is also called solid waste or industrial solid waste.

# Disposal of Vials, Syringes, Applicators and Sprayers

Waste Items	Type of Waste	Where to Dispose
<ul style="list-style-type: none"> <li>• Empty inactivated vaccine vials</li> <li>• Empty inactivated vaccine syringes without needles</li> </ul>	Nonhazardous/Noninfectious waste	<ul style="list-style-type: none"> <li>• Normal trash</li> <li>• May be placed in a sharps container and disposed of as medical/biohazard waste</li> </ul>
<ul style="list-style-type: none"> <li>• Preservative-free vaccines (most commonly single-use vials and some pre-filled syringes without needles)</li> </ul>	Nonhazardous/Noninfectious waste	<ul style="list-style-type: none"> <li>• Normal trash</li> <li>• May be placed in a sharps container and disposed of as medical/biohazard waste</li> </ul>
<ul style="list-style-type: none"> <li>• Empty syringes with needles</li> </ul>	Medical/Biohazard waste	<ul style="list-style-type: none"> <li>• Sharps container</li> </ul>
<ul style="list-style-type: none"> <li>• Live vaccines:               <ul style="list-style-type: none"> <li>○ LAIV (live attenuated influenza vaccine) in nasal sprayer</li> <li>○ Oral vaccine applicator</li> <li>○ Vial</li> </ul> </li> </ul>	Medical/Biohazard waste	<ul style="list-style-type: none"> <li>• Medical waste bag or bin</li> <li>• Sharps container (needle attached to syringe must be disposed in Sharps container)</li> </ul>
<ul style="list-style-type: none"> <li>• Vaccines containing mercury or cresol-based preservative               <ul style="list-style-type: none"> <li>○ Multi-dose vials containing vaccine</li> <li>○ Pre-filled syringes (i.e., Fluvirin<sup>®</sup>, manufacturer Seqirus)</li> </ul> </li> </ul>	Hazardous waste	<ul style="list-style-type: none"> <li>• Hazardous waste container or sharps container</li> <li>• Must be clearly marked as "Hazardous/Universal Waste-pharmaceuticals/vaccines"</li> <li>• Company must have license to dispose of hazardous waste</li> </ul>

<sup>1</sup>A vial is considered empty when there is 3% or less of the original vaccine remaining and all vaccine that can be removed by normal means (syringe) have been removed. Single or multi-dose vials that have been fully administered may still contain extra vaccine, however, just because there is not enough vaccine left for a dose does not mean the vial is empty. The vial needs to be disposed of properly.

<sup>2</sup>Vaccines labeled as "preservative-free" may contain trace amounts of thimerosal used during manufacturing but later removed, leaving only a trace amount (about 1/100th of the amount found in vaccines that use thimerosal as a preservative). Vaccines with trace amounts of thimerosal need to be disposed of as hazardous waste.

<sup>3</sup>Fluvirin<sup>®</sup> (manufacturer Seqirus) presentation 0.5-mL prefilled syringe is formulated without preservative; however, thimerosal, a mercury derivative used during manufacturing, is removed by subsequent purification steps to a trace amount ( $\leq 1$  mcg mercury per 0.5-mL dose).